7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

therefore vitally important that more attention be devoted in the future to the preventive aspects of public health work.

Prevention of Disease

Many measures could be taken to strengthen the preventive aspect of public health work. Doctors and nurses must, above all, be imbued with its importance, for they have countless opportunities to impress on their patients the need for proper hygiene and sanitation. Thus social medicine, involving the study of the environmental factors bearing on health and of appropriate measures for the prevention of disease, should be taught as part of the qualifying course in the medical school at Baghdad. Far more emphasis also needs to be placed on the teaching of hygiene in elementary and secondary schools. Children should be taught not only good personal habits, but also the importance of sanitation in and around the home. Special classes might be given in the prevention of the main endemic diseases, by the school medical officer whenever possible. Health education must likewise be given an important place in the curriculum of teachers' training colleges and special courses in the prevention of diseases associated with irrigation and cultivation should be provided in the School of Agriculture and the School of Engineering. Hospitals should be an object lesson in hygiene and every effort made to impress on patients the importance of personal and domestic hygiene. The interest of adults in public health can be stimulated by visual education and by organizing "health weeks", the first of which was held in Diwaniya with conspicuous success during the Mission's stay. The army and police have an excellent opportunity to teach habits conducive to good health. Prospective farmers for new settlement projects should be medically examined to restrict, as far as possible, the introduction of endemic diseases into these settlements. To prevent water pollution it would be desirable to locate villages in such settlements away from irrigation canals wherever possible.

The Mission strongly recommends that the number of village dispensaries, which is now over 400, be gradually increased and that they be equipped to serve as public health centers. Such centers would be simple in function, aimed primarily at providing elementary medical and health assistance to as many people as possi-

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stock and the use of tools. Crafts should emphasize the best use of cheap local materials in weaving and rug making, woodwork, simple building operations and the like. Urban schools might stress such crafts as leather work, woodwork, bookbinding and printing, brick-making, textiles, etc. For girls, lessons might be provided in sewing, cooking and other domestic pursuits. For all pupils, visits to hospitals, industrial plants, demonstration farms and the like would prove a useful supplement to training acquired at school.

As already indicated, health and hygiene should be given a more important place in the curriculum. Children could not only be taught useful facts regarding the causes and methods of treatment of endemic diseases like bilharzia, hookworm, malaria and eye infections, but could be persuaded to do something about them by helping to eliminate stagnant pools and showing others how to avoid water pollution. Similarly they could learn something about the qualities of different foods, the importance of personal hygiene and the value of cleanliness in the home.

In this type of educational program it would be desirable to enlist the cooperation of officials dealing with health, agriculture and local government problems. Through the children, more effective contacts with the parents would be established. Parents would learn to appreciate the practical value of education to their children and themselves, and a better link between school and community would be forged.

The inauguration of a revised curriculum and better teaching methods will require a prior reorientation of the training given to teachers. The curricula of Training Colleges should be recast radically, in order to reduce the present excessive number of subjects and to bring the training nearer to the realistic conditions of the rural or urban areas for which the teachers are being trained. Colleges for training rural teachers should be located in rural areas where students can study rural problems and can actively participate in rural community life. Every Training College should have a demonstration school in which it should have the latitude to work out new teaching methods. At present such Colleges tend to be omnibus educational institutions which give too little time to the professional training of teachers.

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ANNEX F

PUBLIC HEALTH

I. Introduction

Extent of Progress Made in Public Health

In the past 30 years health services in Iraq have improved considerably. In 1918 the country had only one hospital, contrasted with the present 89 hospitals (4,812 in-patient beds or one bed per 1,000 people) and 448 dispensaries. Control measures including the use of vaccines, particularly for smallpox, have cut down the incidence of epidemics during the last few years. Cholera has not occurred since 1931 and the plague not since 1935. Smallpox and louse-borne typhus also seem to be under control. An Institute of Endemic Diseases has been set up with headquarters in Baghdad. Steps have already been taken to control malaria and a good deal of information is being assembled on schistosomiasis (bilharzia) and ankylostomiasis. Nevertheless, the main endemic diseases—malaria, schistosomiasis, trachoma, and ankylostomiasis —are still very common.

In 1949 there were 797 doctors practicing in Iraq, of whom 419 or 53 percent were in Baghdad. There were about 387 government pharmacies and 252 pharmacists working in private pharmacies in the larger towns.

The doctors are supplemented by 265 health officials, originally trained primarily to staff village dispensaries, and 400 nurses and 659 dressers (male hospital attendants), about one to every four or five hospital beds. There are also private nurses, midwives and dressers, and 130 public vaccinators who are employed on a permanent basis. In 1948 and 1949, 3,061,955 and 2,080,777 smallpox vaccinations were made (the 1947 census showing a total population of 4,799,500).

Malaria, trachoma and bronchitis were the main hospital cases; the dysenteries, anemias, wounds, syphilis and phthisis were

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congested living conditions combined with a coarse and monotonous diet.

In common with many other countries, there has been a drift to the towns, and unsanitary slums have formed on the outskirts of some cities. Steps should be taken to improve the living conditions of these slum dwellers. So far sewers and sewage disposal are generally lacking in the cities and towns. Baghdad has septic tanks and cesspools, but there are still some open drains; most of the larger towns have similar systems of sewage disposal but conditions in the smaller towns and villages are still very primitive. The disposal of household refuse and the cleaning of streets are generally well carried out in the bigger cities but not in most towns and villages.

Constant pilgrimage traffic creates another problem in public health. The holy shrines of the Shia sect of Moslems are in Iraq and a large number of Iraqis are members of this sect. There is a continuous stream of travelers through the country, including both Iraqis and foreigners, mostly Iranians, visiting the holy shrines, and Iraqi and foreign pilgrims on their way to Mecca. All this traffic exposes Iraq to the dangers of imported epidemic disease and stringent quarantine regulations have been enacted. But the land frontier with Iran is so long that it is quite certain many incoming pilgrims never are subjected to any control measures. This means that Iraq needs internal preventive services of the highest possible standard. Currently, all pilgrims leaving Iraq for Mecca are vaccinated against smallpox and inoculated against cholera.

The need for greater emphasis on preventive measures stands out clearly in even a brief analysis of the most debilitating diseases and their causes.

Intestinal Disorders

Ankylostomiasis (hookworm disease) in itself produces anemia. Many patients are so weak by the time they reach a hospital that they require lengthy treatment. It thrives in an unsanitary environment characterized by inadequate sewage disposal, open drains, and lack of proper latrines. Incomplete surveys indicate that it is most prevalent in the South.

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Expansion of Health Education

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Iraq has a small, wealthy upper class and a small middle class. The great majority of the people are poor and ignorant, most especially in regard to health measures. Health education is badly needed and there is no doubt that the people would respond readily to teaching. Large groups enthusiastically attended all the shows put on for the health week held in Diwaniya province; competitions for the best eating-house, butcher's shop and barber's shop were keenly contested and visitors thronged to see the model house and the medical exhibition. The oil company in Kirkuk employs a British sanitary inspector and the Railways Administration in Baghdad recently sent their Iraqi sanitary inspector to take a course of study in the United Kingdom. The response of the householders in these places to sanitary measures is striking; their pride in their homes is obvious and the absence of flies conspicuous.

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To begin with, every doctor should have a thorough understanding of the relation of environmental factors to disease. Greater emphasis on the teaching of preventive medicine and particularly of social medicine in the medical school, as has already been recommended, would help to inculcate a wider appreciation of the importance of the preventive outlook in all medical work. Like doctors, nurses have a unique opportunity to teach their patients, and personal and domestic hygiene should take their proper place in the training courses for nurses. Every hospital should be an object lesson in hygiene and every patient should learn by his stay in it.

Health education must be given an important place in the curriculum of the teachers' training schools, and special courses in the prevention of the diseases associated with irrigation and cultivation should be included in the syllabus of the School of Agriculture and of the School of Engineering.

Hygiene is already taught in the schools but ought to be given greater emphasis. Personal hygiene is essentially a matter of habit formation and young school children should be trained in good habits as a daily routine. Special classes could be given in the prevention of the main endemic diseases—possibly, in some cases, by the school medical officer. It is for the Health Department to

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decide what should be taught and then the educators can decide how it should be taught.

In the villages, the school buildings could sometimes serve as models for house-building; in any case, every school should in itself be a lesson in hygiene. Well-balanced meals are provided in the boarding schools and serve as examples for the home. Possibly the elder girls could be taught some "mothercraft", the treatment of minor ailments (cuts, abrasions, etc.), some sewing and also some domestic economy.

At present the *School Medical Service* is administered by the Ministry of Education and has a staff of 20 doctors and four dentists. In the school year 1949-50, 147,084 pupils were examined revealing splenomegaly among two percent, schistosomiasis in five percent, and trachoma in 25 percent, while 40,767 attendances were made for dental treatments. To carry out an effective program for treatment of trachoma, more school nurses will be needed.

There are several *other groups* through which health education can be disseminated. Police training schools and prisons, including reformatories, offer good opportunities for teaching health. The Central Prison in Baghdad is a good example of cleanliness and orderliness. The Army should teach in its officer training courses that the promotion and maintenance of the health of an officer's unit is his first duty.

A few voluntary societies are now undertaking some health education, but the scope of their work could be greatly increased, particularly in maternal and child welfare and in the prevention of tuberculosis. Special pronouncements could be prepared by religious societies for reading in the mosques (e.g. against the pollution of water supplies as a measure to limit the spread of schistosomiasis). Simple health notes written in the vernacular would be of help where a local newspaper is published. Short talks could be given from the national broadcasting station.

There is a great opportunity for health teaching in the projected new settlements. The staff required for such work are medical assistants, sanitary overseers, midwives and possibly public health nurses who, after having received appropriate training, will work in and from one or more village health centers.

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The most important links with the people are, of course, those who belong to them and who work among them: that is, the dispensary *medical assistants* and *midwives* in villages and the midwives and public health nurses in the towns. *Maternal and child welfare centers* in towns could also provide health education. There are already a few centers operating in Baghdad but there is a great need to open more centers throughout the country as soon as trained staff are available. The proposed house-to-house inspectors, sanitary overseers and sanitary inspectors could all be most valuable teachers.

There is no doubt that *health weeks* would stimulate great interest and health exhibits could be included in agricultural and other shows (e.g. to display measures designed to prevent the spread of malaria, schistosomiasis, etc.). Travelling vans giving film shows might also be of some use.

Elected *public health committees* of the village elders, advised by the medical assistant or visiting doctor, might do much to improve conditions in villages. *Mobile dispensaries* should include in their staff a sanitary inspector and a health visitor (public health nurse) who could go round the village while the doctor is seeing patients.

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It should be noted that the government plans to inaugurate a rural health center at Abu Ghuraib, which is designed to provide curative and preventive services for the population of the area and at the same time serve as a practical field for training rural health workers, with particular emphasis on the control of communicable diseases and maternal and child health. It has requested advice from the World Health Organization on the planning and establishment of the center. Accordingly, in 1950, provision was made under the technical assistance budget of the World Health Organization for a rural health survey. Provision has been made under the 1952 technical assistance budget for one public health administrator with general experience in rural health, one epidemiologist, one sanitarian, and two public health nurses, one with general experience and one with the experience in midwifery. It is expected that the government will submit a request to UNICEF for appropriate supplies and equipment. At a later stage the program may be developed in cooperation with other specialized agencies.

63:Simmons et al G-5 (1941-1951) 1954
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teurization plant near Baghdad and seeks to improve the standards of agriculture which should be reflected in better nutrition among the people. The Ministry of Communications and Works maintains health and medical facilities at the port of Basra, and furnishes medical care for railway personnel.

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Several voluntary agencies carry on health work, usually in co-operation with the Ministry of Health. The Children's Welfare Society conducts an extensive program for the promotion of maternal and child health, and operates welfare centers in Baghdad and the administrative centers of the remaining provinces. The Red Crescent Society supports a child health center in Baghdad, and provides training for girls in first aid and home nursing through branches in Baghdad, Basra, Hilla, Amarah and Kirkuk. The Anti-Tuberculosis Society campaigns against tuberculosis, and contributed toward the erection of a sanatorium, opened in 1951, near Baghdad. The Catholic Nuns Society runs a small general hospital and dispensary, and the Society of Buyout el Umma an ophthalmic hospital and dispensaries in Baghdad.

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The Board of Foreign Missions of the Reformed Church of America maintains a medical mission in the Amarah region. It operates a hospital and founded the leper colony, which has since been taken over by the government. The Seventh Day Adventists also have a hospital in Baghdad. The Iraq Petroleum Company and its subsidiaries, the Mosul Petroleum Company and the Basra Petroleum Company, provide medical and health services for the benefit of their employees.

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Medical Institutions

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Hospitals and Dispensaries. In 1950, there were 82 civilian hospitals in Iraq with an aggregate capacity of 4,901 beds, or slightly over 1 bed per 1,000 population. Of this number, 2,086 beds were located in Baghdad, 534 in Basra and 412 in Mosul provinces. Sixty-seven hospitals, with a

were reported in 1923, 1927 and 1931. Since 1931, cholera has been almost completely absent from the country, although one imported case was recorded in 1939, when the disease was epidemic in Afghanistan and Iran.

Strict quarantine regulations are enforced, and travelers from India, Pakistan and Ceylon, as well as pilgrims from Mecca, without valid certificates of immunization against cholera are retained in quarantine centers for a period of 7 days. Mass immunization with cholera vaccine is carried on among the populations in the border provinces whenever epidemics are reported from the adjacent territories. At the time of the recent epidemic in Egypt, in 1947, immunization was compulsory for all travelers entering the country and for the inhabitants of towns and villages along the Syrian frontier.

Helminthiases. SCHISTOSOMIASIS. Schistosomiasis, caused by *Schistosoma haematobium*, has probably been present in the lower Tigris and Euphrates river basins since ancient times. It is highly endemic in the southern and the central provinces, where the intermediate snail host, *Bulinus truncatus*, is found in widespread but often localized foci. The disease is prevalent among the children and among the agricultural and other laborers who work in infested waters, particularly the men and the boys, who are exposed to infection to a greater extent than the women. It reaches maximum proportions between 10 and 20 years of age, but is usually negligible in early childhood. Transmission is seasonal: it takes place from May to the end of November, but primarily between June and October, when infected snails are most abundant. The insanitary customs of the inhabitants, associated with the frequent use of the canals for religious ablutions and the severe summer heat which is conducive to bathing in any convenient body of water, are contributory factors. The infection rates average 18 to 25 per cent in the irrigated districts of the delta, but vary from zero

164 pulmonary infections, but tuberculous meningitis is common in young children. Among 838 cases of nonpulmonary tuberculosis admitted to the surgical wards of the Royal Hospital in the 4 years 1947-50,[34] over 76 per cent were diagnosed as lymphadenitis and over 21 per cent as infections of the spine.

164 743 The new 400-bed sanatorium opened near Baghdad under the joint auspices of the Anti-Tuberculosis Society and the government health authorities in 1951 was the first tuberculosis hospital in the country. Previously, facilities for the treatment of tuberculous cases were provided only in the provincial hospitals, or in sanatoria in Syria and Lebanon, where the Ministry of Health subsidizes about 200 beds for the use of Iraqi patients. Plans have been projected by the Ministry for the construction of tuberculosis hospitals in each of the provinces: a 120-bed hospital was completed in Basra in 1952, and it was anticipated that hospitals would soon be ready for use in Kirkuk and Mosul. As of 1950, the dispensaries available for the treatment of chest diseases totaled 6, of which 2 were located in Baghdad and one each in Mosul, Kirkuk Diwaniya and Sulaimaniya. X-ray laboratories were maintained in Baghdad, Kirkuk and Mosul.

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751 A BCG inoculation and tuberculin testing program was initiated by the Ministry in 1952, in conjunction with the World Health Organization and the United Nations International Children's Emergency Fund. It is proposed to concentrate at first on the children and the adolescents in the larger cities. In 1952 also, the World Health Organization sponsored the establishment of a tuberculosis demonstration and training center at the Royal Hospital in Baghdad.

164 Smallpox. Epidemics of smallpox break out almost annually, and reach major proportions at intervals of 3 to 8 years. Since 1930, large-scale epidemics were reported in 1932-33, 1940-42, 1946 and 1948-49. In the 1932-33 outbreaks, the peak of incidence came in 1932, when 2,318 cases were re-

164 corded; in 1940-42, a peak of 2,098 cases was noted in 1941. Over 1,460 cases were treated by the medical officers in 1946 and 2,026 in 1948, with a decrease to 736 cases in 1949. In the intervening years the recorded prevalence ranged from 18 to 700
[165] cases. The fatality rates have varied in different outbreaks from 5 to 40 per cent.

751 Vaccination against smallpox is required
361 theoretically, but enforcement is difficult in the more remote villages, and particularly among the transitory laborers and nomadic tribes. In some sections, as in the date-growing areas, mass vaccination campaigns are carried on during the date harvest season, when people flock to the groves and the packing sheds in search of work. At the time of an epidemic, vaccination is compulsory among all the affected populations.

164 **Diphtheria.** Diphtheria is endemic, and localized outbreaks are observed from time to time. In the absence of Schick test surveys, however, little is known regarding the extent of infection in the general population. In the 6 years 1944-49, the recorded incidence rose from 210 cases in 1944 to 903 in 1948 and 612 in 1949—an apparent increase which is attributed by the local authorities to improved facilities for diagnosis.

751 Immunization against diphtheria is pro-
164 vided in many of the schools in the larger cities and in certain of the child health centers.

164 **Meningitis.** Outbreaks of meningococcus
165 meningitis are sporadic, usually occurring during the winter months. In the 12-year period 1939-50, from 112 to 489 cases were recorded each year, while the fatality rates ranged from 8 to 35 per cent.

164 **Other Infections.** The pneumonias are prevalent, and are major causes of death in all age groups. Outbreaks of influenza are recurrent. Measles, whooping cough, chickenpox and mumps are endemic, and often epidemic. The cases of whooping cough are typically severe, and the mortality among the undernourished children is normally high.

Occasional cases of scarlet fever are en-

23a Hooper and Field 8-5 (1934) 1937 MAI Iran MAI
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The roots of this and other species of birthwort are highly valued medicines in the East. The drug from Iran is a cylindrical and contorted root, 12 mm. in diameter, showing in section the peculiar wedge-shaped bundles of the wood. It has a somewhat bitter and pungent taste. The Aristolochias are stimulating tonics and are often given for snake bites. Locally the root is used for amenorrhea and as a pectoral and stomachic.

Aristolochia rotunda L. (Aristolochiaceae)

نخود الوند

Nukhūd-i-alvand (Teh., Isf.); Nukhund-i-alavandi (Ar.); Zaravand-i-gird (Pers.); the roots.

W.H.M.M. 150761.

The roots are tuberous, brownish or gray, round in shape like a small cottage loaf, with a broad base, a top narrow and marked with pit-like scars and the remains of fallen stems. They are hard, horny, and starchy, and have an acrid odor and taste. The drug is given as a tonic, diuretic, emmenagogue, and vermifuge. In Iraq *A. Maurorum* L. is used by the tribes to provide an antiseptic for healing wounds, and also for curing scab in sheep (G.).

Artemisia maritima L. (Compositae)

درمنه

Darmanah (Teh.); Afsant-el-bahara (Ar.); santonica, wormseed.

Ph. Ind. 2: 288; Greenish and Maplethorpe, Y.B.Pharm. 1923, 646.

Field 179; K.B. 304.

The dried, unexpanded flower heads of various species of *Artemisia*—often mixed with *A. vulgaris* L. and water (H.F.)—are used as a vermifuge. The provinces of Turkestan and Kurdistan supply large quantities. Aitchison says that *A. maritima* L. and *A. campestris* are to be found everywhere in northeastern Iran. The rootstocks and dry stems are used for fuel, and the flower heads collected from the villages around Tehran are sold in the bazaars. Santonin, the active, anthelmintic principle of wormseed, is now manufactured near the town of Chimkent in Turkestan (Ph. Ind. 2: 288).

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Artemisia vulgaris L. (Compositae)

افسنطين

Afsantīn (Teh.); Afsantīn-i-hindi (Ar.); wormwood.

Ph. Ind. 2: 284.

35: Hooper and Field S-5 (1934) 1937 MAI Iran MAI
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Melia Azedarach L. (Meliaceae)

سنجد تلخ

Sinjad-i-talkh (Teh., Isf.); Mab-ul-dan (Ar.); Bakayan (Hind.); China tree fruits.

Field 443; W.H.M.M. 150840.

The China tree or Persian lilac was probably introduced into the southern parts of India by the Mohammedans, and various parts of the tree have long been used in medicine by the Arabs and Persians. The fruits are called Sinjad-i-talkh or bitter sinjad to distinguish them from sinjad, the fruit of the oleaster (*Elaeagnus angustifolia* L.). The berries are oblong or rounded, 12 mm. in length, with smooth, wrinkled, reddish brown skin, a pulpy, bitter flesh, and hard, five-grooved stone. The fruits are given for fevers. The stones are worn as a necklace to avert contagious diseases.

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Mentha sylvestris L. (Labiatae)

پونه

Pūnah (Teh.); Gul-i-punah (Isf.); Pudina (Hind.); leaves of mint.

Field 256, 412; W.H.M.M. 150811.

The wild mint is indigenous to the temperate western Himalayan region and to Iran. The general name for mint, best known in the East, is Fudanaj, the Arabic form of the Persian word, Pudina. The author of the "Makhzan-el-Adwiya" describes three kinds of Fudanaj: the wild, mountain, and water mint. Mountain mint has hoary leaves, but the specimens from T....., although fragrant, are too imperfect to name specifically. Different kinds of mint are cultivated in gardens and are used as domestic remedies on account of their pleasant odor and stimulant and carminative properties.

—Mint leaves are prescribed for waterbrash or pyrosis; they are also prepared like tea for chills, rheumatism, and dysentery (H.F.).

Merendera persica Boiss. (Liliaceae)

سورنجان سفره شده

Sūrinjān-i-sufrah shudah (Teh.); the corms.

Ph. Pers.; Boiss. 5: 167; Schl.; Ait.; Ph. Ind. 3: 496.

W.H.M.M. 150870; K.B. 326.